

WHAT IS CLAIMED IS:

1. A reactor containment vessel of a boiling water reactor configured to contain a reactor pressure vessel, the reactor pressure vessel being connected to at least one main steam pipe which penetrates the reactor containment vessel at a main-steam-line penetration point, wherein:

the reactor containment vessel has a first side and a second side which is opposite to the first side;

the main-steam-line penetration point is disposed on a first side of the reactor containment vessel; and

distance between outer surface of the reactor pressure vessel and inner surface of the reactor containment vessel on the first side is longer than the distance on a second side.

2. The reactor containment vessel according to Claim 1, wherein the reactor containment vessel has a non-circular horizontal cross-sectional shape;

the reactor containment vessel has a first axis and a second axis which is perpendicular to the first direction;

the span of the reactor containment vessel in the first axis is longer than the span in the second axis; and
the main-steam-line penetration point is disposed

in a direction which is close to one way of the first axis.

3. The reactor containment vessel according to Claim 1, further comprising:

a lower drywell disposed below the reactor pressure vessel;

a wetwell horizontally surrounding the lower drywell; and

a suppression pool of annular shape contained in the wet well; wherein:

the suppression pool has a first surface which is a surface of a wall on a side of the lower drywell and a second surface which is an inner surface of the containment vessel; and

distance between the first surface and the second surface on the first side is longer than the distance on the second side.

4. The reactor containment vessel according to Claim 1, further comprising:

an air conditioner for the reactor containment vessel disposed outside of the reactor containment vessel.

5. The reactor containment vessel according to Claim 1, further comprising:

an air conditioner for the reactor containment vessel disposed outside of the reactor containment vessel, wherein the air conditioner is communicated to the reactor containment vessel via an air-conditioner duct with an air-conditioner-duct isolation valve.

6. The reactor containment vessel according to Claim 1, further comprising:

a feed water pipe connected to the reactor pressure vessel;

wherein:

the reactor containment vessel has a feed-water-line penetration point;

the feed water pipe which penetrates the reactor containment vessel at a feed-water-line penetration point;

the feed-water-line penetration point is disposed on the first side of the reactor containment vessel; and

the main-steam-line penetration point and the feed-water-line penetration point are arranged in a substantially same level.

7. The reactor containment vessel according to Claim 1, further comprising:

a lower drywell disposed below the reactor pressure vessel;

a wetwell horizontally surrounding the lower drywell;

a suppression pool of annular shape contained in the wet well; and

an access tunnel penetrating the suppression pool, wherein the access tunnel is able to communicate between the lower drywell and outside of the reactor containment vessel on the second side of the reactor containment vessel.

8. The reactor containment vessel according to Claim 1, further comprising:

an upper drywell containing upper part of the reactor pressure vessel, and the main steam pipe between the reactor pressure vessel and the main-steam-line penetration point;

a lower drywell disposed below the reactor pressure vessel;

a wetwell horizontally surrounding the lower drywell and having an annular suppression pool; and

a plurality of vent pipes communicating the upper drywell and the wetwell, the vent pipes being distributed biased to the first side of the reactor containment vessel.

9. The reactor containment vessel according to

Claim 1, further comprising a fuel storage pool configured to contain fuel assemblies taken out of the reactor pressure vessel when the boiling water reactor is out of operation, wherein the fuel storage pool is disposed on the second side of the reactor containment vessel.

10. A reactor containment vessel of a boiling water reactor configured to contain a reactor pressure vessel, the reactor pressure vessel being connected to at least one main steam pipe and at least one feed water pipe; wherein:

the reactor containment vessel has a main-steam-line penetration point and a feed-water-line penetration point; the main steam pipe penetrates the reactor containment vessel at a main-steam-line penetration point; the feed water pipe penetrates the reactor containment vessel and at a feed-water-line penetration point; and the main-steam-line penetration point and the feed-water-line penetration point are arranged at substantially same level.

11. The reactor containment vessel according to Claim 1, wherein the reactor pressure vessel has a first circular horizontal cross-sectional shape, and the reactor containment vessel has a second circular

horizontal cross-sectional shape which eccentrically surrounds the first circular horizontal cross-sectional shape.